

WHAT IS CLAIMED IS:

1. A security device for responding to change of pressure, the device comprising:

a sensor unit for electrically detecting the change of indoor pressure generated by the intrusion of an object from the outside;

an amplifying unit for amplifying an electric signal corresponding to the change of indoor pressure detected by the sensor unit;

an one-chip processor for determining whether or not the electric signal transmitted from the amplifying unit is 1~30 Hz frequencies that is caused by the intrusion of the object from the outside;

a switching unit for adjusting the operational state of the one-chip processor; and

an alarm unit for notifying the intrusion of the object to a user in case that the one-chip processor decides that the change of pressure is caused by the intrusion of the object from the outside.

2. The device of claim 1, wherein the sensor unit uses a condenser microphone.

3. The device of claim 1, further comprising a transmission unit for notifying the intrusion of the object from the outside detected by the one-chip

processor based on the change of indoor pressure to the user by means of a wire and/or wireless transmission.

4. The device of claim 1, wherein the one-chip processor includes a low-pass filter that allows passage of a low frequency signal only, which is similar to the frequency generated by opening the door among other signals passed through the amplifying unit.

5. A portable security alarm apparatus for responding to change of pressure, the device comprising

a portable matter; and

a security alarm device which is placed in the portable matter, being placed anywhere the portable matter is placed;

the security alarm device comprising;

a sensor unit for electrically detecting the change of indoor pressure generated by the intrusion of an object from the outside;

an amplifying unit for amplifying an electric signal corresponding to the change of indoor pressure detected by the sensor unit;

an one-chip processor for determining whether or not the electric signal transmitted from the amplifying unit is caused by the intrusion of the object from the outside;

a switching unit for adjusting the operational state of the one-chip processor; and

an alarm unit for notifying the intrusion of the object to a user in case that the one-chip processor decides that the change of pressure is caused by the intrusion of the object from the outside.

6. A security alarm device for responding change of pressure, the device comprising:

a sensor unit for electrically detecting change of indoor pressure as the door opens;

an amplifying unit for amplifying the electric signal corresponding to the change of indoor pressure detected by the sensor unit;

a low-pass filter for passing a low electric signal only that is similar to the low frequency electric signal among other electric signals passed through the amplifying unit, being generated by change of indoor pressure owing to opening of door and/or window;

an one-chip processor for deciding whether or not the low frequency electric signal transmitted from the amplifying unit is the low frequency signal caused by opening;

a switching unit for adjusting the operational state of the one-chip processor;

an alarm unit for notifying the intrusion of the object to a user in case that the one-chip processor decides that the low frequency signal is caused by the intrusion of the object from the outside; and

a transmission unit for notifying the intrusion to the user via the wire and/or wireless telephone if the one-chip processor confirms that the low frequency signal is caused by the intrusion of the object from the outside.

7. The device of claim 6, wherein the one-chip processor further comprising a digital frequency filter for passing only similar frequencies to the frequency generated by opening the door more accurately among other low frequency electric signals that passed through the low-pass filter.

8. The device of claim 6, further comprising a digital noise filter for generating an on/off signal that makes the low frequency included in heavy noise to be properly ignored, being formed on a branched line after the amplifying unit.

9. The device of claim 6, wherein the switching unit adjusts the frequency sensitivity of the one-chip processor.

10. The device of claim 6, wherein the switching unit decides whether to send signals to the transmission unit or the alarm unit.

11. A security alarm method, comprising the steps of:
- detecting change of indoor pressure through an electric signal of the sensor unit;
- converting the electric signal detected by the sensor unit to an amplified analog signal;
- a low-pass filtering the amplified analog signals to be passed by 1~30 Hz frequencies;
- converting the low-pass analog signals to digitalized sampling values by sampling the analog signals periodically; and
- sounding alarm or warning the user in a remote place through the wire and/or wireless telephone if smaller sampling values than a reference are inputted for a certain period.
12. The method of claim 11, wherein the reference is optionally designated by a user.
13. The method of claim 11, wherein the reference takes a minimum value from at least two sampling values inputted in an early stage of the alarming step.
14. The method of claim 11, further comprising the step of band-pass filtering for passing a number of frequencies generated by opening the door immediately after the low-pass filtering step.

15. The method of claim 14, wherein a digital frequency filter is employed in the band-pass filtering.

16. The method of claim 14, wherein the band-pass filtering passes low frequencies to a broad range from 4 Hz to 12 Hz and/or from 14 Hz to 25 Hz.

17. The method of claim 11, further comprising the step of digital noise filtering for ignoring the electric signals at low frequencies in a heavy noise by making the on signal to select analog signals whose maximum value is smaller than the reference for a certain interval among other waveforms in a period of the analog signals outputted in the step of conversion.

18. A security alarm method, comprising the steps of:
detecting change of indoor pressure through an electric signal of the sensor unit;

converting the electric signal detected by the sensor unit to an amplified analog signal;

a low-pass filtering the amplified analog signals to be passed by a low bandwidth;

converting the low-pass analog signals to digitalized sampling values by sampling the analog signals periodically;

band-pass filtering 1~30 Hz frequencies that are directly generated by opening the door; and

sounding alarm or warning the user in a remote place through the wire and/or wireless telephone if smaller sampling values than the reference are inputted for a certain period.

19. A security alarm method, comprising the steps of:

detecting change of indoor pressure through an electric signal of the sensor unit;

converting the electric signal detected by the sensor unit to an amplified analog signal;

a low-pass filtering the amplified analog signals to be passed by a low bandwidth;

measuring a gradient of the low-pass analog signals; and

sounding alarm or warning the user in a remote place through the wire and/or wireless telephone if smaller sampling values than the reference are inputted for a certain period.

20. The method of claim 19, wherein the gradient is measured in an interval having either the maximum value of the waveform or the minimum value of the waveform as one end.